Air Quality
ENVIRONMENTAL QUALITY

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Governor

MICHAEL S. REGAN
Secretary

MICHAEL A. ABRACZINSKAS
Director

May 23, 2017

Ms. V. Anne Heard
Acting Regional Administrator
U.S. Environmental Protection Agency (EPA), Region 4
61 Forsyth Street SW – Mail Code: 9T25
Atlanta, GA 30303-8909

Re: North Carolina Division of Air Quality
Exceptional Events Initial Notification
Wildfire-Related (October/November 2016)

Dear Ms. Heard,

Pursuant to 40 CFR 50.14(c)(2), the North Carolina Division of Air Quality (DAQ) hereby notifies your office of its intent to request exclusion of measurements described herein as being due to exceptional events. As we discussed with your staff, we had several particulate monitors in North Carolina that were impacted by smoke from more than 20 wildfires that burned in October and November of last year. The smoke from these fires contributed to exceedances of the numerical value of the 24-hour PM2.5 National Ambient Air Quality Standards (NAAQS) and elevated the seasonal averages at the impacted sites. Enclosed in this initial notification are three attachments.

- Attachment A: Summary of events and data;
- Attachment B: Spreadsheet summarizing fires; and
- Attachment C: Plots of seasonal data (September, October, November between 2011-2016).

We look forward to working with your staff to develop and submit the required demonstration that will allow you to exclude the air quality monitoring data effected by these fires. If you have any questions, please do not hesitate to contact me at john.c.evans@ncdenr.gov or (919) 707-8474.

Sincerely,

John C. Evans
Chief, Ambient Monitoring Section

Attachments (described above)

cc: Ryan Brown, EPA Region 4
Michael Abraczinskas, NCDAQ
Joette Steger, NCDAQ
Jeff Francis, Mecklenburg County
Kevin Lance, Western NC
Jason Bodenhamer, Forsyth County
Amy Smoker, EBCI

Attachment A: Summary of Data

North Carolina Division of Air Quality

Exceptional Events Initial Notification

Wildfire-Related (October/November 2016)

Initial Notification of Poetential Exceptional Event Information Summary

Submitting Agency: North Carolina Division of Air Quality

Agency Contact: John C. Evans, Ambient Monitoring Chief

Date Submitted: May 23, 2017

Applicable NAAQS: The 2012 PM2.5 Annual and 2006 24-Hour Standards

Affected Regulatory Decision: New Source Performance Standards (NSPS), New Source Review (NSR) and Prevention of Significant Deteriation (PSD).

Area Name/Designation Status: Multiple areas in North Carolina

Narrative: During the period of time between October 25, 2016 and November 30, 2016, smoke from more than 20 wildfires (see attachment 1) in the western portion of the state inpacted many particulate monitors in our network. The smoke from these fires contributed to many exceedances of the National Ambient Air Quality Standards (NAAQS) for particulate matter less than or equal to 2.5 microns in diameter (PM2.5) and elevated the seasonal averages at most sites. The North Carolina Division of Air Quality (NCDAQ) requests that the regional administrator for Region IV of the U.S. Environmental Protection Agency (EPA) accepts this Initial Notification so an Exceptional Events Demonstration document can be prepared to petition for the exclusion of the air quality monitoring data effected from these fires from the normal planning and regulatiory requirements under the Clean Air Act (CAA) in accordance with the Exceptional Events Rule (EER).

Selection Methodology: Values were selected for this Exceptional Events Demonstration by using values higher than three times the inter quartile range (IQR) added to the third quartile (Q3), and one and a half times the IQR added to the Q3. Ambient data from the previous five years (the fall season of September, October and November – 2011 through 2016) were used to determine the IQR and Q3 for each site.

Asheville MSA Data

AQS ID	Site	Date	24 Hour Value µg/m^3	Actual AQI	Comments
37-021-0034-88101-1	WNC Board of Ed	11/08/16	40.3	129	> Q3+3*IQR = 24.7 µg/m3
37-021-0034-88101-1	WNC Board of Ed	11/14/16	68.1	158	> Q3+3*IQR = 24.7 µg/m3
37-021-0034-88101-1	WNC Board of Ed	11/23/16	59.6	174	> Q3+3*IQR = 24.7 µg/m3

2016 Annual Mean With Values	2016 Annual Mean Without Values	2016 Annual 98% With Values	2016 Annual 98% Without Values	2014 to 2016 24-Hour Design Value With	2014 to 2016 24-Hour Design Value Without	2014 to 2016 Annual Design Value With	2014 - 2016 Annual Design Value Without
8.5	7.2	40.2	16	23	15	7.8	7.4

Charlotte MSA Data

AQS ID	Site	Date	24 Hour Value µg/m^3	Comments
37-119-0041-88101-1	Garinger	11/11/16	20.0	> Q3+1.5*IQR = 19.5 µg/m3
37-119-0041-88101-1	Garinger	11/17/16	32.4	> Q3+3*IQR = 27.8 µg/m3
37-119-0042-88101-1	Montclaire	11/11/16	20.5	> Q3+1.5*IQR = 19.3 µg/m3
37-119-0042-88101-1	Montclaire	11/17/16	30.5	> Q3+3*IQR = 27.1 µg/m3
37-119-0043-88101-1	Oakdale	11/11/16	20.9	> Q3+1.5*IQR = 18.3 µg/m3
37-119-0043-88101-1	Oakdale	11/14/16	18.8	> Q3+1.5*IQR = 18.3 µg/m3
37-119-0043-88101-1	Oakdale	11/17/16	30.2	> Q3+3*IQR = 26.0 µg/m3

AQS ID	2016 Annual Mean With Values	2016 Annual Mean Without Values	2016 Annual 98% With Values	2016 Annual 98% Without Values	2014 to 2016 24-Hour Design Value With	2014 to 2016 24-Hour Design Value Without	2014 to 2016 Annual Design Value With	2014 - 2016 Annual Design Value Without
37-119-0041-88101-1	8.6	8.4	18.3	16.4	18	17	8.8	8.7
37-119-0042-88101-1	9.0	8.8	20.5	17.4	19	18	9	9
37-119-0043-88101-1	8.7	8.3	18.8	16.4	17	16	8.6	8.5

Durham-Chapel Hill MSA Data

AQS ID	Site	Date	24 Hour Value µg/m^3	Actual AQI	Comments
37-063-0015-88101-3	Durham Armory	11/15/16	17.9		> Q3+1.5*IQR = 16.9 µg/m3
37-063-0015-88101-3	Durham Armory	11/16/16	23.6		> Q3+1.5*IQR = 16.9 µg/m3
37-063-0015-88101-3	Durham Armory	11/18/16	42.7	135	> Q3+3*IQR = 25.1 µg/m3
37-063-0015-88101-3	Durham Armory	11/19/16	28.4		> Q3+3*IQR = 25.1 µg/m3
37-063-0015-88101-3	Durham Armory	11/24/16	17.7		> Q3+1.5*IQR = 16.9 µg/m3
37-063-0015-88101-3	Durham Armory	11/25/16	18.9		> Q3+1.5*IQR = 16.9 µg/m3

2016 Annual Mean With Values	2016 Annual Mean Without Values	2016 Annual 98% With Values	2016 Annual 98% Without Values	2014 to 2016 24-Hour Design Value With	2014 to 2016 24-Hour Design Value Without	2014 to 2016 Annual Design Value With	2014 - 2016 Annual Design Value Without
8.7	8.4	19.8	16	19	17	8.6	8.5

Fayetteville MSA Data

AQS ID	Site	Date	24 Hour Value µg/m^3	Comments
37-051-0009-88101-3	William Owen	11/16/16	25.9	> Q3+3*IQR = 23.7 µg/m3
37-051-0009-88101-3	William Owen	11/17/16	20.3	> Q3+1.5*IQR = 16.0 µg/m3
37-051-0009-88101-3	William Owen	11/18/16	25.5	> Q3+3*IQR = 23.7 µg/m3
37-051-0009-88101-3	William Owen	11/19/16	20.0	> Q3+1.5*IQR = 16.0 µg/m3
37-051-0009-88101-3	William Owen	11/23/16	16.3	> Q3+1.5*IQR = 16.0 µg/m3
37-051-0009-88101-3	William Owen	11/25/16	21.5	> Q3+1.5*IQR = 16.0 µg/m3

2016 Annual Mean With Values	2016 Annual Mean Without Values	2016 Annual 98% With Values	2016 Annual 98% Without Values	2014 to 2016 24-Hour Design Value With	2014 to 2016 24-Hour Design Value Without	2014 to 2016 Annual Design Value With	2014 - 2016 Annual Design Value Without
8.5	8.3	19.7	19.7	17	17	8.4	8.3

Greensboro MSA Data

AQS ID	Site	Date	24 Hour Value µg/m^3	Actual AQI	Comments
37-081-0013-88101-3	Mendenhall	11/09/16	16.9		> Q3+1.5*IQR = 16.0 µg/m3
37-081-0013-88101-3	Mendenhall	11/15/16	18.0		> Q3+1.5*IQR = 16.0 µg/m3
37-081-0013-88101-3	Mendenhall	11/16/16	23.2		> Q3+1.5*IQR = 16.0 µg/m3
37-081-0013-88101-3	Mendenhall	11/18/16	38.7	109	> Q3+3*IQR = 24.6 µg/m3
37-081-0013-88101-3	Mendenhall	11/19/16	17.6		> Q3+1.5*IQR = 16.6 µg/m3
37-081-0013-88101-3	Mendenhall	11/25/16	17.6		> Q3+1.5*IQR = 16.6 µg/m3

2016 Annual Mean With Values	2016 Annual Mean Without Values	2016 Annual 98% With Values	2016 Annual 98% Without Values	2014 to 2016 24-Hour Design Value With	2014 to 2016 24-Hour Design Value Without	2014 to 2016 Annual Design Value With	2014 - 2016 Annual Design Value Without
8.4	8.3	17.5	16.0	16	15	8.3	8.3

Hickory MSA Data

AQS ID	Site	Date	24 Hour Value µg/m^3	Actual AQI	Comments
37-035-0004-88101-1	Hickory	11/08/16	21.6		> Q3+1.5*IQR = 17.5 µg/m3
37-035-0004-88101-2	Hickory A	11/08/16	23.4		> Q3+1.5*IQR = 17.5 µg/m3
37-035-0004-88101-4	Hickory	11/09/16	21.1		> Q3+1.5*IQR = 17.5 µg/m3
37-035-0004-88101-4	Hickory	11/13/16	28.3		> Q3+3*IQR = 26.3 µg/m3
37-035-0004-88101-1	Hickory	11/14/16	42.3	154	> Q3+3*IQR = 26.3 µg/m3
37-035-0004-88101-2	Hickory A	11/14/16	60.2	153	> Q3+3*IQR = 26.3 µg/m3
37-035-0004-88101-4	Hickory	11/15/16	56.6	153	> Q3+3*IQR = 26.3 µg/m3
37-035-0004-88101-4	Hickory	11/16/16	32.0		> Q3+3*IQR = 26.3 µg/m3
37-035-0004-88101-1	Hickory	11/17/16	28.1		> Q3+3*IQR = 26.3 µg/m3
37-035-0004-88101-4	Hickory	11/18/16	48.5	133	> Q3+3*IQR = 26.3 µg/m3
37-035-0004-88101-1	Hickory	11/23/16	18.3		> Q3+1.5*IQR = 17.5 µg/m3

2016 Annual Mean With Values	2016 Annual Mean Without Values	2016 Annual 98% With Values	2016 Annual 98% Without Values	2014 to 2016 24-Hour Design Value With	2014 to 2016 24-Hour Design Value Without	2014 to 2016 Annual Design Value With	2014 - 2016 Annual Design Value Without
9.0	8.4	21.6	18.1	19	17	8.9	8.7

Winston-Salem MSA Data

AQS ID	Site	Date	24 Hour Value µg/m^3	Comments
37-057-0002-88101-3	Lexington	11/15/16	24.6	> Q3+1.5*IQR = 19.0 µg/m3
37-057-0002-88101-3	Lexington	11/16/16	32.2	> Q3+3*IQR = 28.6 µg/m3
37-057-0002-88101-3	Lexington	11/17/16	19.9	> Q3+1.5*IQR = 19.0 µg/m3
37-057-0002-88101-1	Lexington	11/17/16	19.9	> Q3+1.5*IQR = 19.4 µg/m3
37-057-0002-88101-3	Lexington	11/18/16	32.4	> Q3+3*IQR = 28.6 µg/m3

2016 Annual Mean With Values	2016 Annual Mean Without Values	2016 Annual 98% With Values	2016 Annual 98% Without Values	2014 to 2016 24-Hour Design Value With	2014 to 2016 24-Hour Design Value Without	2014 to 2016 Annual Design Value With	2014 - 2016 Annual Design Value Without
8.5	8.3	24.5	15.7	25	22	9	8.9

Non-MSA Data

AQS ID	Site	Date	24 Hour Value µg/m^3	Actual AQI	Comments
37-173-0002-88101-3	Bryson City	10/25/16	28.5		> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/02/16	18.9		> Q3+1.5*IQR = 18.1 µg/m3
37-173-0002-88101-3	Bryson City	11/06/16	37.2	105	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/07/16	43.1	120	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/08/16	46.7	129	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/09/16	56.5	153	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/10/16	39.9	112	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/11/16	22.0		> Q3+1.5*IQR = 18.1 µg/m3
37-173-0002-88101-3	Bryson City	11/12/16	44.6	152	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/13/16	65.3	161	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/14/16	62.5	158	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/15/16	36.3	141	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/22/16	38.5	114	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/23/16	99.4	174	> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/24/16	32.9		> Q3+3*IQR = 27.8 µg/m3
37-173-0002-88101-3	Bryson City	11/27/17	26.3		> Q3+1.5*IQR = 18.1 µg/m3
37-173-0002-88101-3	Bryson City	11/28/16	35.3	100	> Q3+3*IQR = 27.8 µg/m3
37-123-0001-88101-3	Candor	11/16/16	28.7		> Q3+3*IQR = 21.9 µg/m3
37-123-0001-88101-3	Candor	11/17/16	18.9		> Q3+1.5*IQR = 14.6 µg/m3
37-123-0001-88101-3	Candor	11/18/16	17.8		> Q3+1.5*IQR = 14.6 µg/m3
37-099-0006-88101-1	EBCI	11/05/16	20.6		> Q3+1.5*IQR = 16.2 µg/m3
37-099-0006-88101-1	EBCI	11/08/16	44.8	129	> Q3+3*IQR = 22.9 µg/m3
37-099-0006-88101-1	EBCI	11/11/16	28.5		> Q3+3*IQR = 22.9 µg/m3
37-099-0006-88101-1	EBCI	11/14/16	60.2	158	> Q3+3*IQR = 22.9 µg/m3
37-099-0006-88101-1	EBCI	11/23/16	49.8	174	> Q3+3*IQR = 22.9 µg/m3
37-099-0006-88101-2	EBCI 6 Day	11/05/16	20.5		> Q3+1.5*IQR = 17.0 µg/m3
37-099-0006-88101-2	EBCI 6 Day	11/06/16	55.3	105	> Q3+3*IQR = 24.3 µg/m3
37-099-0006-88101-2	EBCI 6 Day	11/09/16	61.4	153	> Q3+3*IQR = 24.3 µg/m3
37-099-0006-88101-2	EBCI 6 Day	11/15/16	32.9		> Q3+3*IQR = 24.3 µg/m3
37-121-0004-88101-1	Spruce Pine	11/08/16	33.8		> Q3+3*IQR = 24.7 µg/m3
37-121-0004-88101-1	Spruce Pine	11/14/16	58.9	158	> Q3+3*IQR = 24.7 µg/m3
37-121-0004-88101-1	Spruce Pine	11/23/16	71.4	174	> Q3+3*IQR = 24.7 µg/m3

AQS ID	Site	2016 Annual Mean With Values	2016 Annual Mean Without Values	2016 Annual 98% With Values	2016 Annual 98% Without Values	2014 to 2016 24-Hour Design Value With	2014 to 2016 24-Hour Design Value Without	2014 to 2016 Annual Design Value With	2014 - 2016 Annual Design Value Without
37-173-0002-88101-3	Bryson City	9.1	7.6	43	18.8	26	18	8.1	7.6
37-123-0001-88101-3	Candor	6.6	6.4	17.4	16.4	15	14	8.1	8.0
37-099-0006-88101-1	EBCI	10.1	7.2	55.3	13.1	29	14	8.2	7.2
37-121-0004-88101-1	Spruce Pine	8.5	7.1	33.7	14.7	21	15	7.8	7.3

Attachment B: Summary of Fires

North Carolina Division of Air Quality

Exceptional Events Initial Notification

Wildfire-Related (October/November 2016)

Fire Name	Origin County Name	Latitude	Longitude	Fire Reported Date	Fire Attacked Date	Fire Contained Date	Fire Controlled Date	# Cty Impacted	Total Area Burned	Remarks
Elk River	Avery	36.19475	-81.97535	10/04/2016	10/05/2016	11/05/2016	11/13/2016	1	126.75	Fire started from campfire later found by USFS. Fire on private land as well as Pisgah National Forest AND Cherokee National Forest in TN. IMT3 from Cherokee Nat. Forest handled fire for a few days, therefore the fire# is TN-CNF-000230! Fire was originally in rock cliffs, inaccessible to fully extinguish. Indirect lines were constructed and fire monitored. Later fire crept out of rocks and threatened structures which prompted burn out. Later, re-burn caused several re-kindles. One escape also occurred on the USFS north flank. Therefore monitoring and mop-up went on for weeks!
Rough Ridge	Northwest Georgia	34.896	-84.564	10/16/2016		11/30/2016	12/2/2016		27870	From Inciweb
Dicks Creek	Jackson	35.400592	-83.251027	10/23/2016	10/23/2016	10/27/2016	12/01/2016	1	719.34	Fire was called in to C.O and refereed to D9 ops officer Hugh Hassell. Ops called 950 and reported smoke on top of the mountain. Caller said they called all VFD they could think of and then found the number to the C.O out of Raleigh and Called them. USFS and NCFS worked as a unified command even though the fire was at first only burning on USFS land. Once resources were on scene control lines were scouted out. The fire crossed the dozer line at 1900 the first night and was burning to hot and fast to go direct and tie the slop back into the dozer line. This was turned over to 9-1 and was turned into a type 3 incident. Unable to enter this fire report. The Federal 209 Number is not accepted in the 209 # slot. It says invalid 209 number. 209 # must be entered since fire was over 100 acres.
Boteler	Clay	35.068367	-83.658483	10/25/2016	10/25/2016	12/02/2016	12/02/2016	1	9,036.38	Started on USFS property; ~ 566 acres burned on private property. Fire managed by the Type 1 Red Team. All resources assigned and costs tracked by the IMT.
Pack Mountain	Cherokee	35.067759	-84.302358	11/01/2016	11/01/2016	11/02/2016	11/08/2016	1	52.85	This fire was investigated by NC Forest Service LE. They were unable to come up with a definite cause of the fire.
Dobson3	Cherokee	35.446	-83.238	11/02/2016		11.25.2016			756.00	From inciweb. On BIA land

Knob	Macon	35.09961	-83.529783	11/02/2016	11/02/2016	11/15/2016	12/02/2016	1	1,257.48	Fire started on federal land. Fire was managed by IMT1 Southern Area Red/Blue team. Refer to federal fire report 2016-NCNCF160275. 8.8 acres of private land was burned.
Tellico	Macon	35.269834	-83.570181	11/03/2016	11/03/2016	11/24/2016	12/02/2016	2	7,384.08	Fire started on federal land in Macon County. Fire was managed under IMT1 Southern Area Red/Blue teams. Fire burned into Ferebee Fire Swain County. Fire burned appx. 3287 acres on private property. Refer to federal fire report 2016-NCNCF-160280.
May Branch	Macon	35.178934	-83.697841	11/03/2016	11/03/2016	11/04/2016	11/10/2016	1	196.12	Fire started on federal land.
Maple Springs	Graham	35.398387	-83.908245	11/04/2016	11/04/2016	11/12/2016	11/13/2016	1	8,057.71	Wx started on USFS aprox 300 acres on private. Two fire starts one at Avey Branch and one at Maple Springs Overlook. Fires burned together. Control time corresponds to end of evacuation. USFS has LE responsibility.
TROUBLE DRIVE	McDowell	35.597517	-81.910467	11/04/2016	11/04/2016	11/04/2016	11/13/2016	1	60.88	FIRE WAS CAUSED BY A FELLER BUNCHER ON AN ACTIVE LOGGING OPERATION. OPERATOR STAYED IN THE AREA FOR APPROX. 1 HOUR AFTER CUTTING TO CHECK FOR ANY FIRE CAUSED BY THE MACHINE DUE TO EXTREMELY DRY CONDITIONS. LOGGER ADVISED HE HAD BUYERS THAT WOULD TAKE THE REMAINING WOOD. NO DAMAGE TO REPORT.
Ferebee	Swain	35.301667	-83.651667	11/05/2016	11/05/2016	11/24/2016	12/02/2016	2	8,777.53	Fire burned into Tellico Fire and was managed under IMT1 Southern Area Red Team. Refer to USFS Fire Reports (2016-NCNCF-160299) and (2016-NCNCF-160280) for additional info and resource info.
Party Rock IA	Rutherford	35.451026	-82.207209	11/05/2016	11/05/2016	11/18/2016	11/30/2016	3	6,530.24	this is intended to document the initial attack of the Party Rock Fire other personal, equipment and damages are listed on the ICS-209
White Water	Jackson	35.03213	-83.015373	11/05/2016	11/05/2016	11/06/2016	12/01/2016	2	103.17	This is a US Forest service fire. Helped With I/A. Fire was started in a remote hard to access location that had one way in and out. NCFS was IA for this fire then turned over to USFS.
Chestnut Knob	Burke	35.611521	-81.633125	11/06/2016	11/06/2016	12/04/2016	12/07/2016	1	6,431.42	Fire occured on South Mountain State Park. Fire cause undetermaned. Type 3 and type 2 team controled fire.
Rock Mountain	North Georgia/Macon	35.0017	-83.474698	11/07/2016	11/07/2016	12/02/2016	12/30/2016	1	27,870.00	Fire started in Georgia and burned into North Carolina. Only the private portions of the fire were mapped here. Refer to GA-CHF160079 federal 209 for more information. Fire was managed by the Pacific Northwest IMT1 team.
Old Roughy	Graham	35.373471	-83.862468	11/08/2016	11/08/2016	11/12/2016	11/12/2016	1	667.10	Fire set mid slope well above road on USFS. 166 Acres of private property.

Pinnacle Mountain (Whole)	Upstate SC; Transylvania	35.079364	-82.741706	11/09/2016	11/10/2016	11/30/2016	12/14/2016	1	10,645.00	Fire started in South Carolina at Table Rock State Park on Pinnacle Mountain 11/9/16. The fire kept growing and progressing towards Transylvania County in North Carolina. The fire got into Transylvania County the afternoon of Wednesday 11/23/16 near the area known as the Head Of Laurel on the NCFS Headwater State Forest. Suppression and containment efforts in North Carolina by NCFS and local fire departments continued through Sunday 11/27/16. Mop-up and monitoring continued through 12/1/16. Fire was 97% contained Sunday 12/4/16 at 10,645 acres with approximately 170 acres burnt in North Carolina. Map does not accurately show fire perimeter due to trying to map large area.
OLD GREENLEE ROAD	McDowell	35.684067	-82.0416	11/09/2016	11/09/2016	11/09/2016	11/13/2016	1	93.09	Fire occurred in area of previous incendiary woods fires. Fire threatened multiple residences.
White Mountain	Caldwell	36.007081	-81.459176	11/09/2016	11/09/2016	11/09/2016	11/13/2016	1	64.57	Kings Creek Fire and the NCFS responded to a reported wildfire at the above location. The fire was found to be burning in an active logging operation. The fire was already well established burning the logging slash and leaf litter. The fire was determined to be the result of chainsaw usage.
Muskrat	Macon	35.135668	-83.51331	11/11/2016	11/11/2016	11/12/2016	11/21/2016	1	98.10	Fire was set on USFS land and burned onto private. Under investigation pending further information.
Cathys Gap	Jackson	35.261078	-82.948028	11/16/2016	11/16/2016	11/17/2016	12/01/2016	1	114.43	This was an all federal fire NCFS ran I/A
American Thread	McDowell	35.79961	-82.019518	11/18/2016	11/18/2016	11/18/2016	11/26/2016	1	60.68	Road side fire in area of previous occurrence.
White Oak Church	Wilkes	36.24477	-81.341323	11/19/2016	11/19/2016	11/20/2016	11/23/2016	1	66.70	The fire started along the road. I am uncertain of the cause of the fire because I could find nothing that seemed to start the fire. It is possible that the fire was started from power lines. I could not add in the dozer operator into the resources responding because Robbie Bledsoe's name is not on the list. The values for damages are correct in the reporting.
Piney Mountain	McDowell	35.652896	-82.167862	11/19/2016	11/19/2016	11/20/2016	11/20/2016	1	61.50	This was a roadside fire. It was the second reported fire of three that were reported within a short period of time. No eyewitnesses were around.

Clear Creek	McDowell	35.7054	-82.103667	11/20/2016	11/20/2016	11/28/2016	12/01/2016	1	2,693.66	Road side fire. Due to sever conditions and lack of resources initial attack was not successful. Property threatened was both private and federal. An IMT was dispatched to manage this fire. Acres burned; 1360 Private 1624 USFS
Two Mile	Ashe	36.342092	-81.502301	11/20/2016	11/20/2016	11/25/2016	11/27/2016	1	430.70	Fire was started by structure fire.
Horton	Watauga	36.149666	-81.575203	11/21/2016	11/21/2016	11/26/2016	12/03/2016	1	1,378.84	
Camp Branch	Macon	35.165304	-83.540714	11/23/2016	11/23/2016	11/30/2016	12/02/2016	1	3,037.94	Fire was started on federl land. Fire was managed by IMT1 Southern Area Red/Blue teams. 225 ac on private lands. Refer to federal fire report 2016-NCNCF-160378
Hwy 151	Buncombe	35.4519	-82.730682	11/24/2016	11/24/2016	11/24/2016	11/24/2016	1	241.72	NCFS, USFS, Upper Hominy Fire Dept., and all west end fire depts. responded to a large brush fire off Hwy 151 in Candler, that had started by a vehicle
Quarry Creek	Monroe, TN	35.35	-84.27	11/17/2016		11/21/2016			670	Estimated
Neddy Mounta	Cooke, TN	35.95	-83.07	11/11/2016		11/21/2016			1200	USA Today story "A fire on Neddy Mountain just east of Newport in Cocke County had grown to 425 acres. Part of U.S. 25 was closed so that firefighters could start a back fire, said Nathan Waters, assistant forester at the East Tennessee District of the state Division of Forestry. The fire began up on the mountain but spread into the valley."

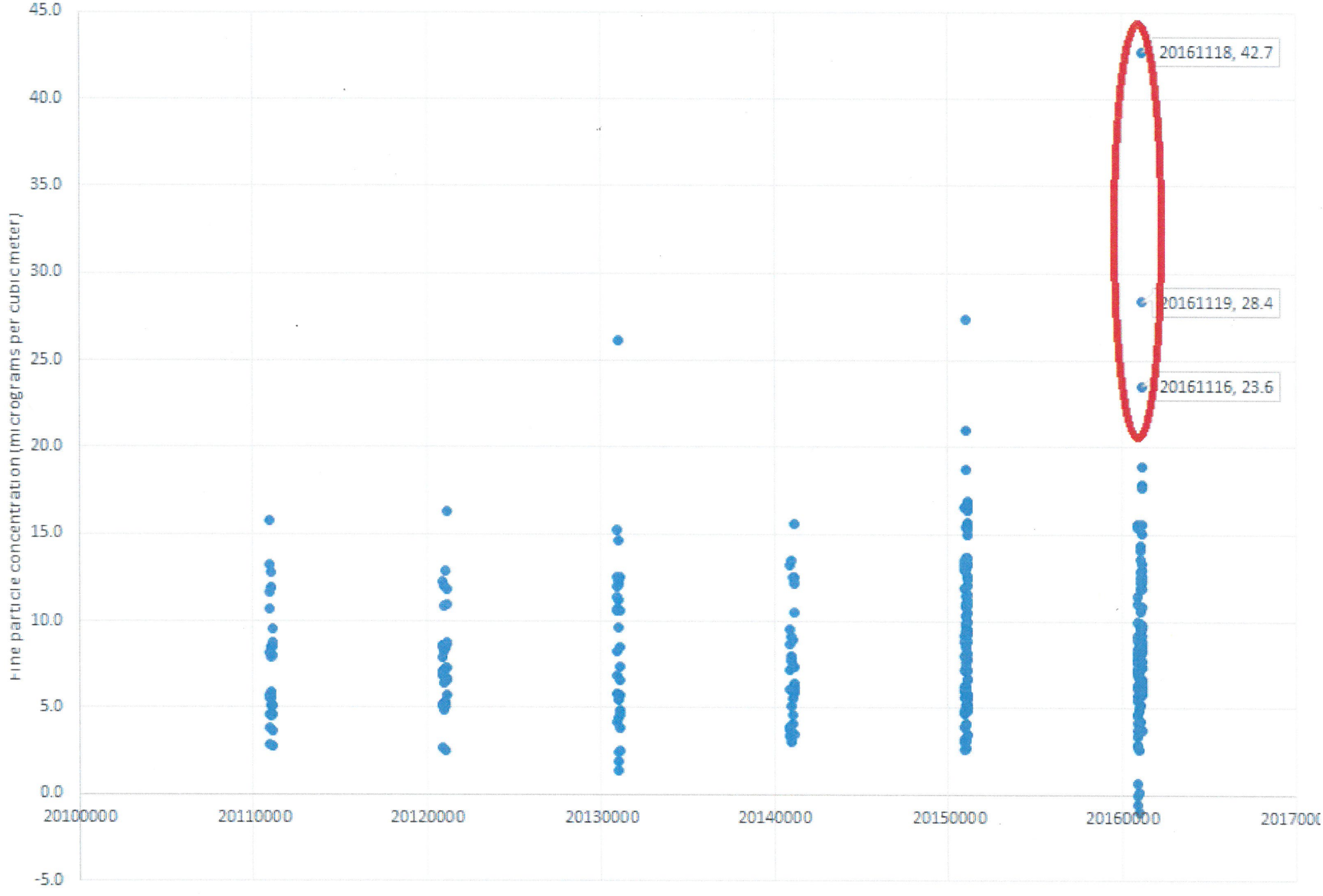
Attachment C: Plots of Data

North Carolina Division of Air Quality

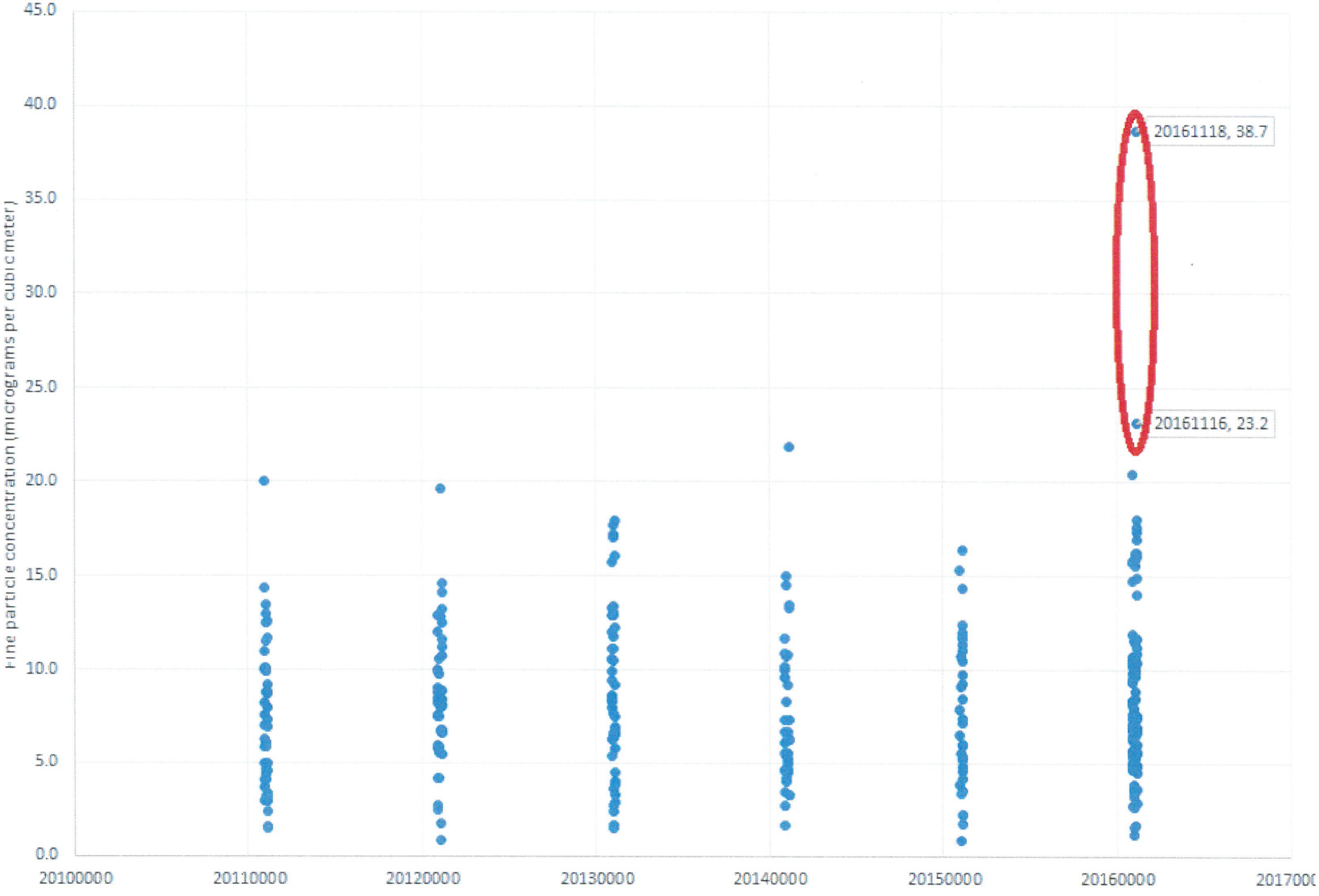
Exceptional Events Initial Notification

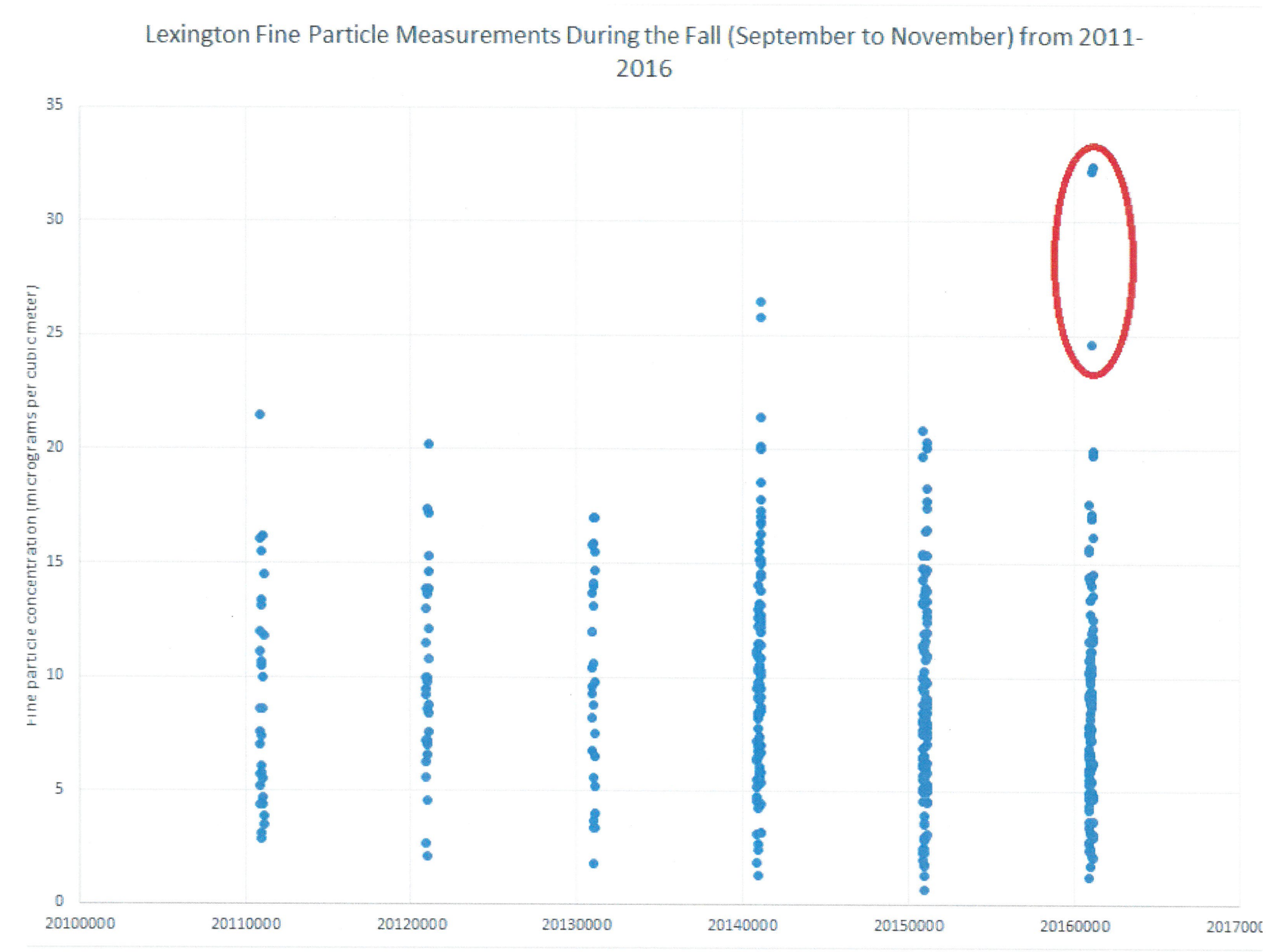
Wildfire-Related (October/November 2016)

Durham Armory Fine Particle Measurements During the Fall (September to November) from 2011-2016

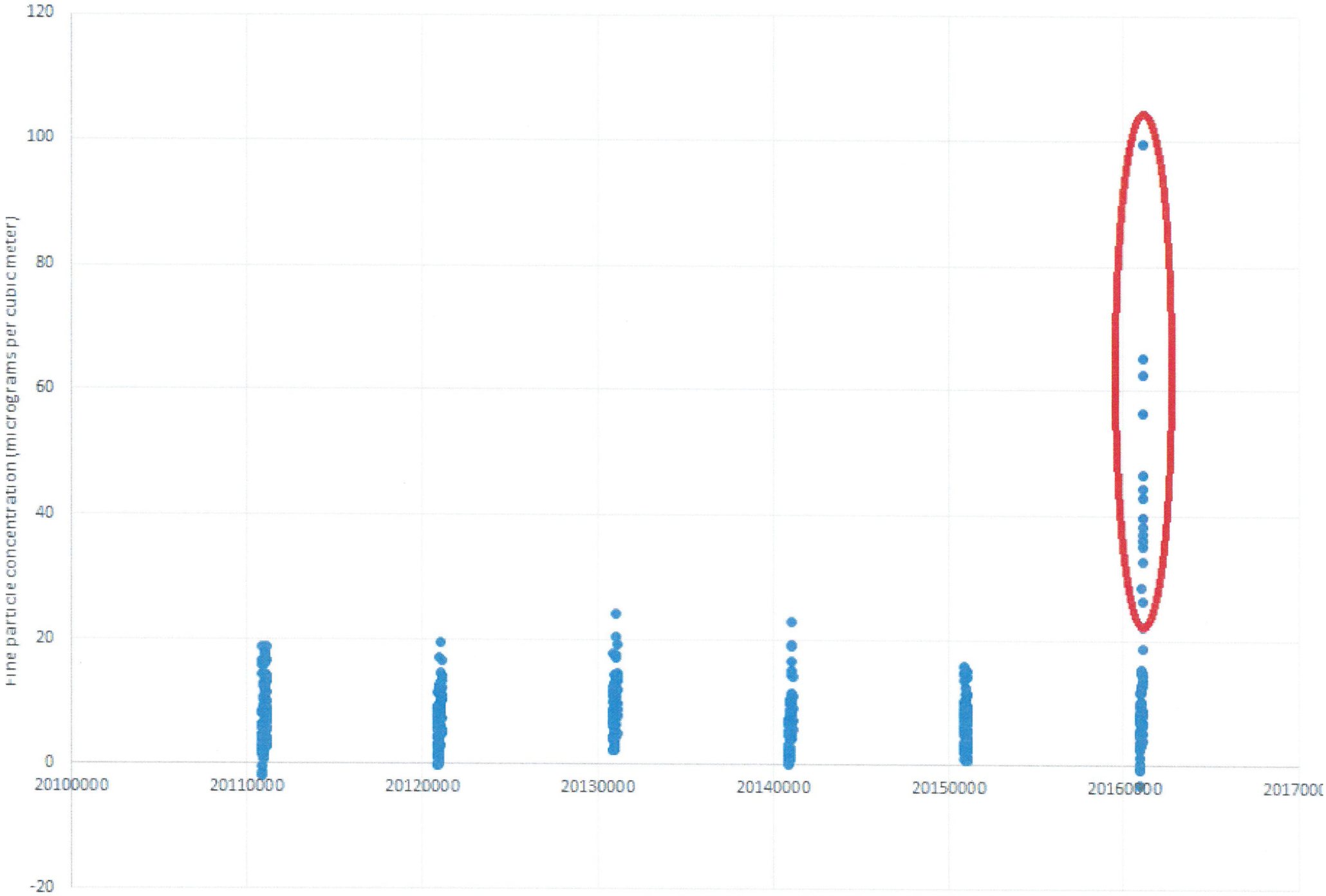


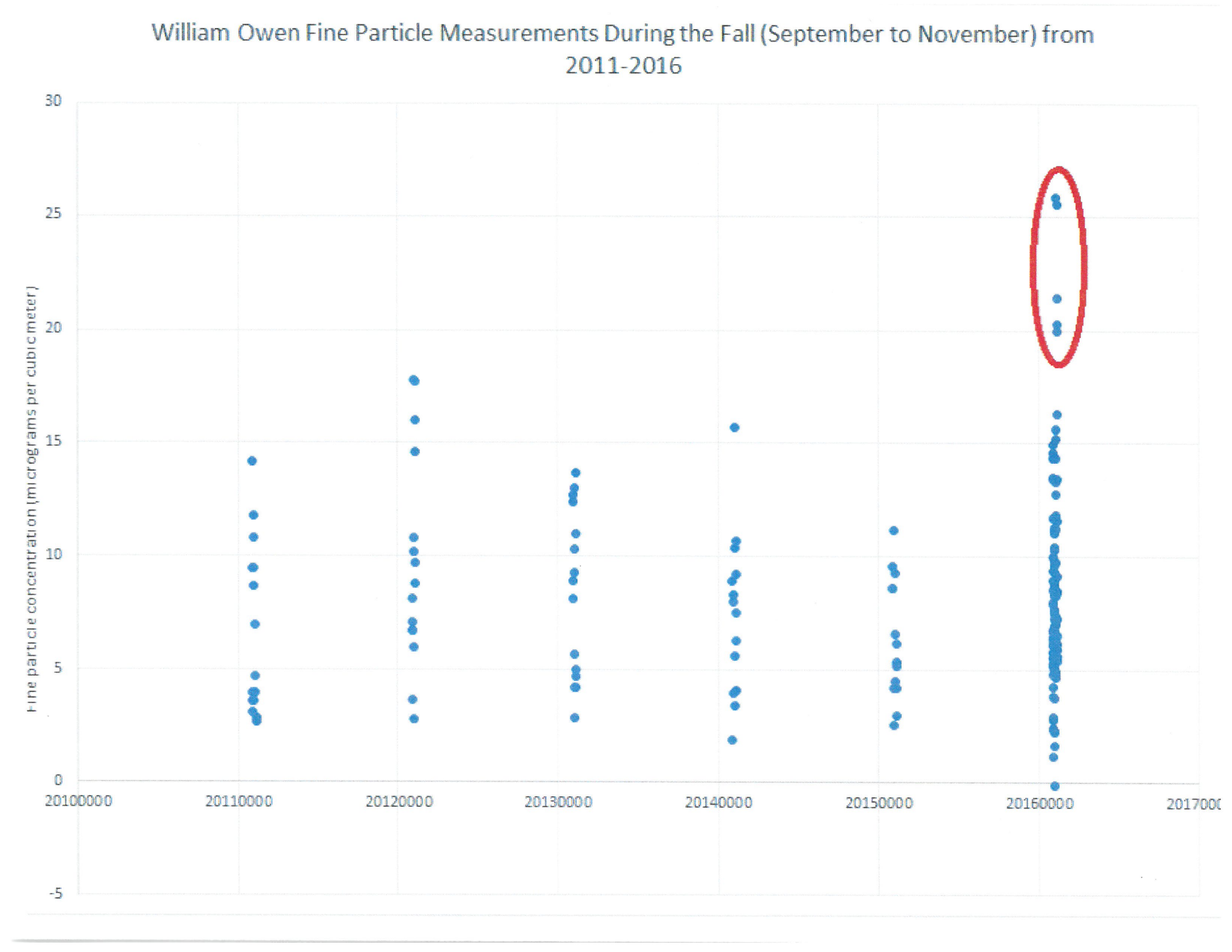
Mendenhall Fine Particle Measurements During the Fall (September to November) from 2011-2016

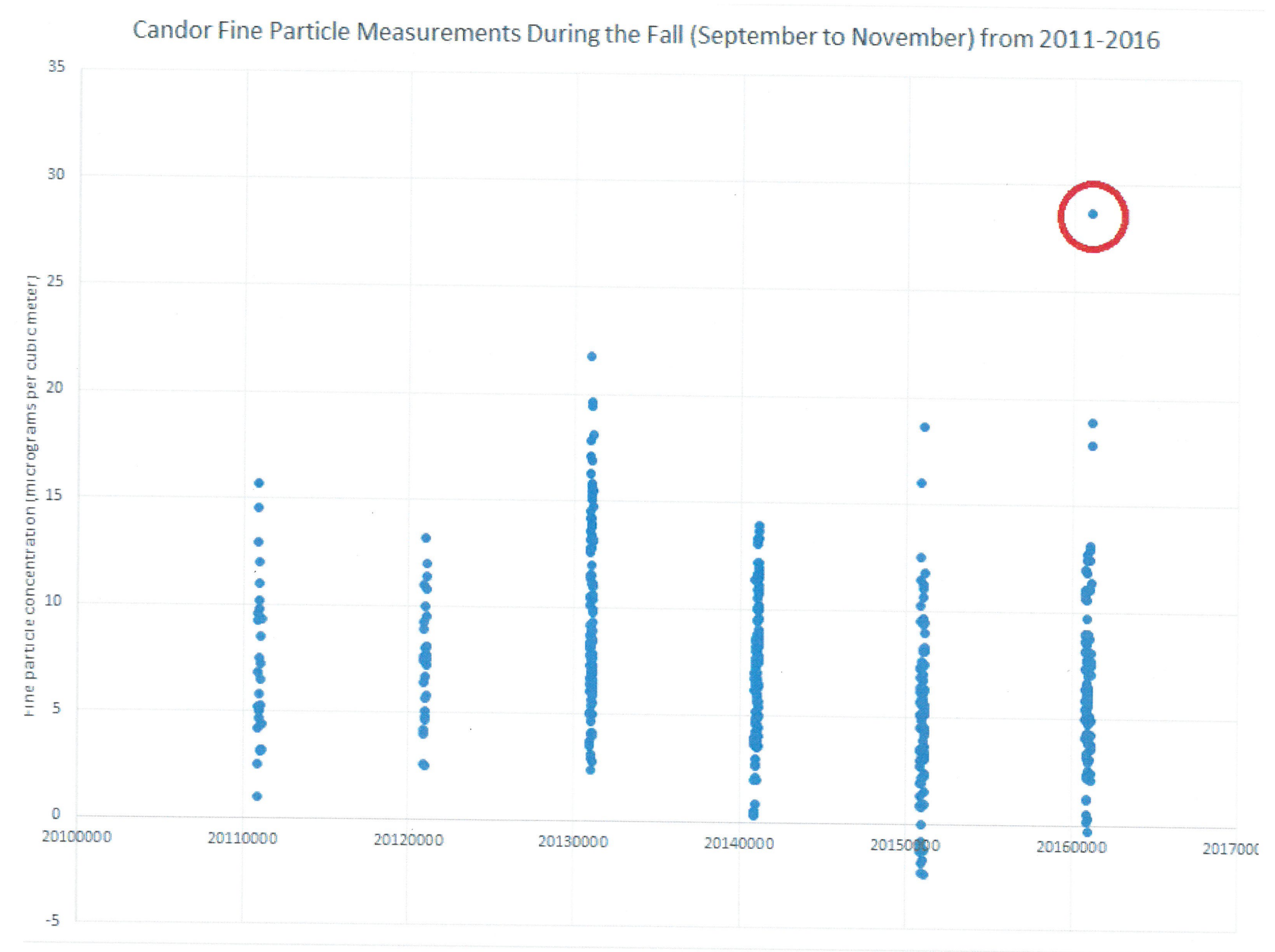


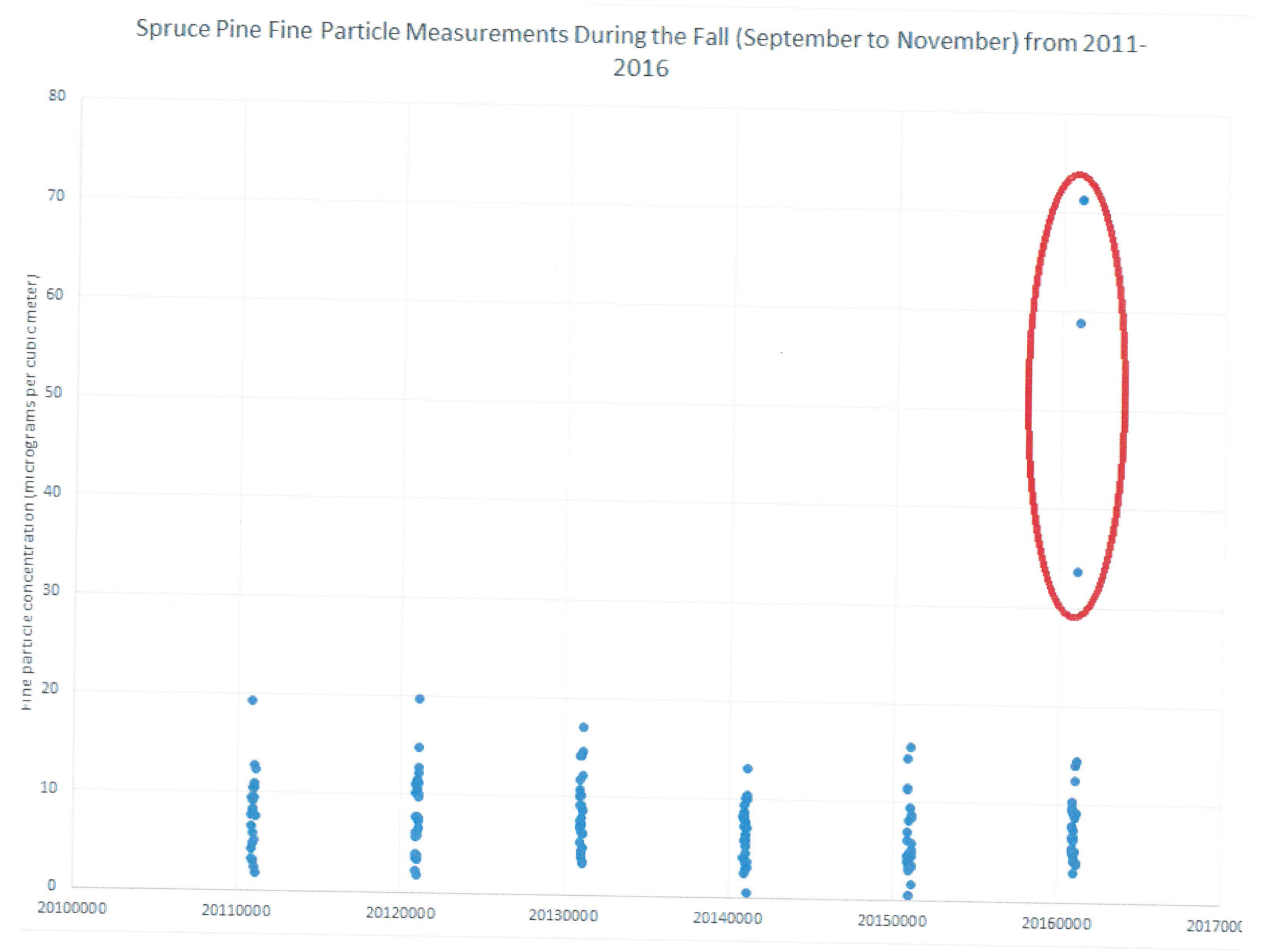

Lexington Fine Particle Measurements During the Fall (September to November) from 2011-2016
Fine particle concentration (micrograms per cubic meter)
35
30
25
20
15
10
5
0
20100000
20110000
20120000
20130000
20140000
20150000
20160000
201700(

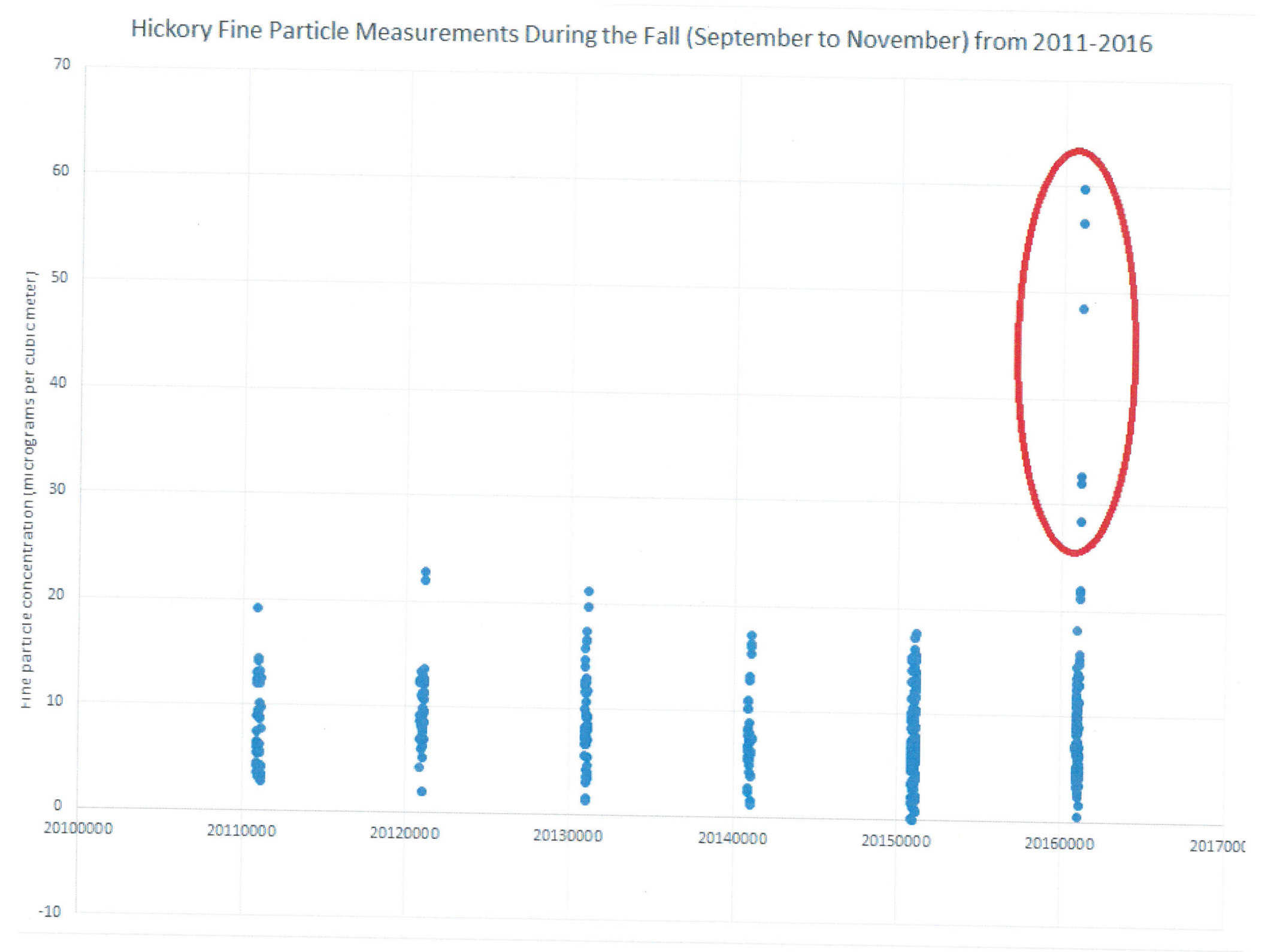
Bryson City Fine Particle Measurements During the Fall (September to November) from 2011-2016

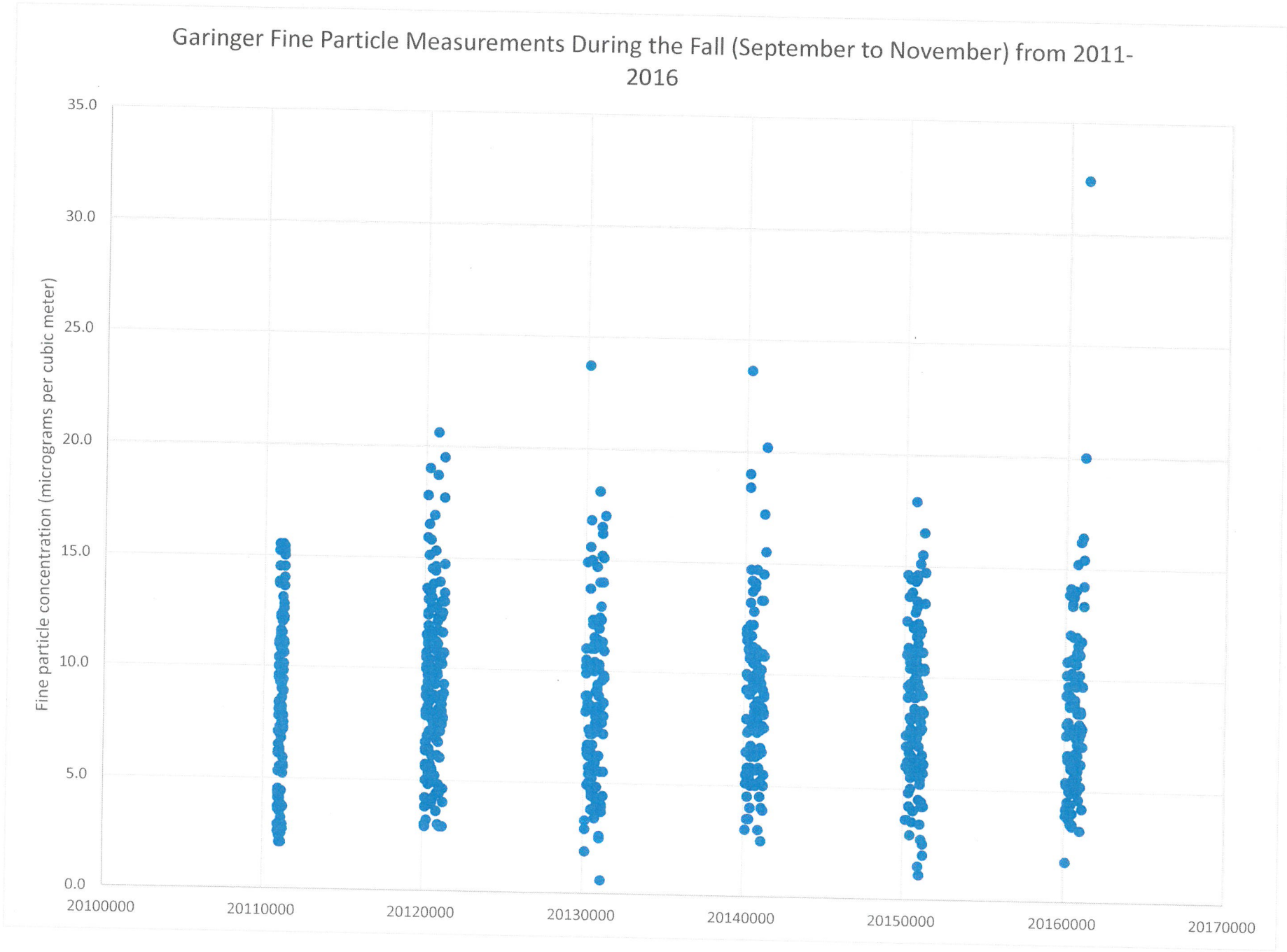


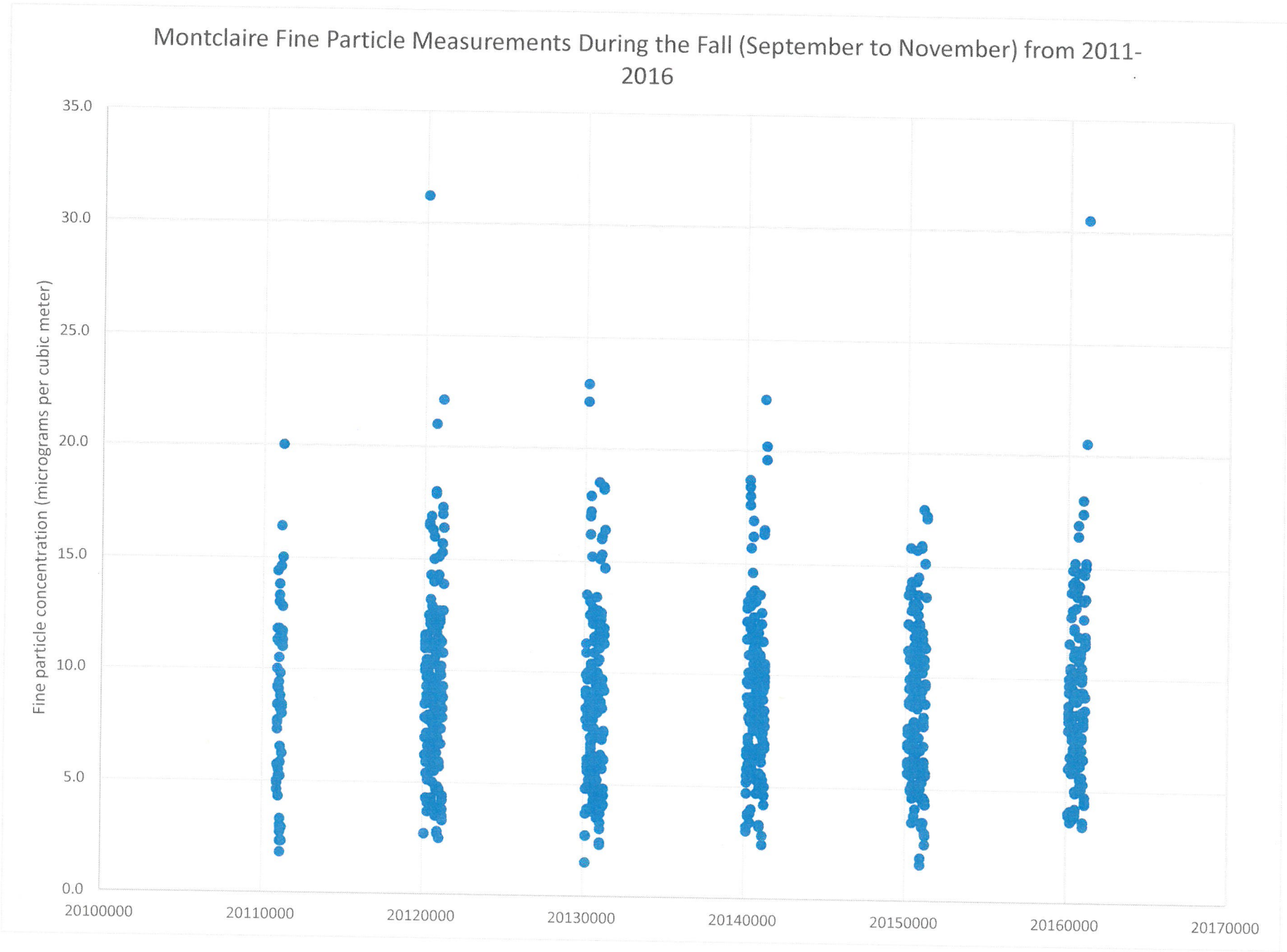

William Owen Fine Particle Measurements During the Fall (September to November) from 2011-2016
Fine particle concentration (micrograms per cubic meter)
30
25
20
15
10
5
0
-5
20100000
20110000
20120000
20130000
20140000
20150000
20160000
201700(

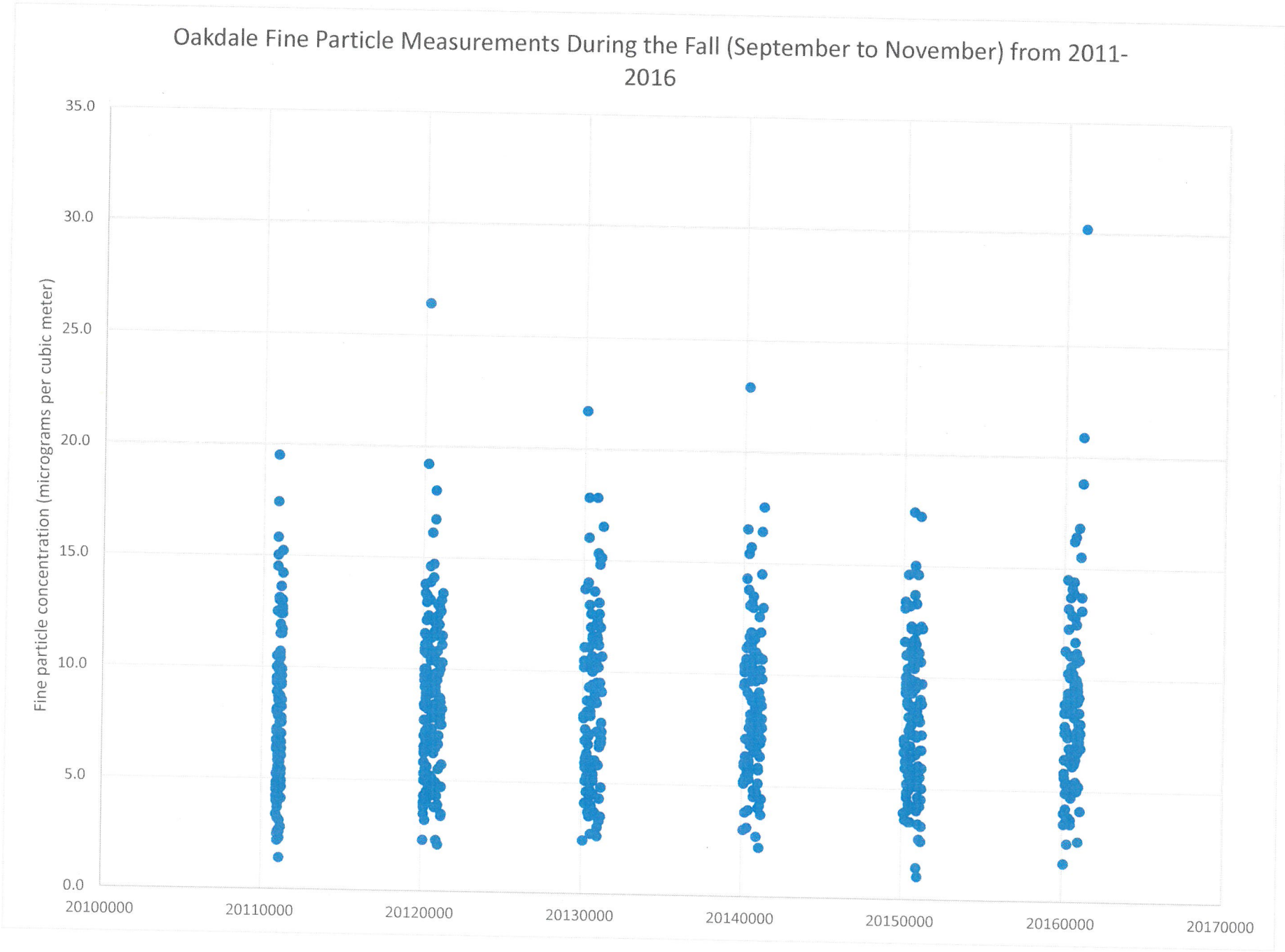

Candor Fine Particle Measurements During the Fall (September to November) from 2011-2016
Fine particle concentration (micrograms per cubic meter)
35
30
25
20
15
10
5
0
-5
20100000
20110000
20120000
20130000
20140000
20150000
20160000
20170000


Spruce Pine Fine Particle Measurements During the Fall (September to November) from 2011-2016
Fine particle concentration (micrograms per cubic meter)
80
70
60
50
40
30
20
10
0
20100000
20110000
20120000
20130000
20140000
20150000
20160000


Hickory Fine Particle Measurements During the Fall (September to November) from 2011-2016
Fine particle concentration (micrograms per cubic meter)
70
60
50
40
30
20
10
0
-10
20100000
20110000
20120000
20130000
20140000
20150000
20160000
201700(


Garinger Fine Particle Measurements During the Fall (September to November) from 2011-2016
Fine particle concentration (micrograms per cubic meter)
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
20100000
20110000
20120000
20130000
20140000
20150000
20160000
20170000


Montclaire Fine Particle Measurements During the Fall (September to November) from 2011-2016
Fine particle concentration (micrograms per cubic meter)
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
20100000
20110000
20120000
20130000
20140000
20150000
20160000
20170000


Oakdale Fine Particle Measurements During the Fall (September to November) from 2011-2016
Fine particle concentration (micrograms per cubic meter)
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
20100000
20110000
20120000
20130000
20140000
20150000
20160000
20170000